

What is claimed is:

1. A sensor comprising:
a die having a working portion;
5 a cap coupled with the die to at least partially cover the working portion;
and
a conductive pathway extending through the cap to the working portion,
the pathway providing an electrical interface to the working portion.
- 10 2. The sensor as defined by claim 1 wherein the working portion includes
MEMS structure, the conductive pathway capable of transmitting electrical
signals relating to the operation of the MEMS structure.
3. The sensor as defined by claim 1 wherein the working portion includes
15 circuitry.
4. The sensor as defined by claim 1 wherein the cap and die form a chamber
for sealingly containing the working portion of the die.
- 20 5. The sensor as defined by claim 1 wherein the cap has a top surface, the
conductive pathway extending through the cap to the top surface, the conductive
pathway being exposed on the top surface.
6. The sensor as defined by claim 1 wherein the working portion includes
25 accelerometer structure.
7. The sensor as defined by claim 1 wherein the working portion includes
gyroscope structure.

8. The sensor as defined by claim 1 further including an electrical interconnect substrate having at least one circuit element, the die and cap together forming a capped die, the capped die being coupled to the substrate so
5 that the conductive path contacts the substrate to interconnect with the at least one circuit element.
9. The sensor as defined by claim 1 wherein the cap hermetically seals the working portion of the die.
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10. The sensor as defined by claim 1 wherein the working portion includes both MEMS structure and circuitry for at least in part detecting movement of the MEMS structure.
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11. A method of producing a sensor, the method comprising:
forming a plurality of working portions on a first wafer;
forming a plurality of through-holes and cavities on a second wafer;
securing the second wafer to the first wafer, at least one of the cavities aligning to at least one of the working portions;
20 filling the through holes with conductive material to form a plurality of conductive paths; and
dicing the first and second wafers.
12. The method as defined by claim 11 wherein the conductive material
25 includes electroless nickel.
13. The method as defined by claim 11 wherein securing the second wafer to the first wafer includes using a screen print seal glass.

14. The method as defined by claim 11 wherein forming a plurality of working portions on a first wafer includes forming one of accelerometer structure and gyroscope structure on the first wafer.

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15. The method as defined by claim 11 wherein the conductive material in at least one of the through holes contacts at least one of the working portions.

16. The method as defined by claim 11 wherein forming a plurality of working portions includes forming MEMS structure and corresponding circuitry.

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17. The product produced by the process defined by claim 11.

18. A sensor comprising:

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a die having a working portion, the working portion having movable structure and circuitry for detecting movement of the movable structure;

a flip-chip bond pad electrically coupled with the circuitry; and

an electrical interconnect substrate, the die being flip-chip bonded to the substrate via the flip-chip bond pad.

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19. The sensor as defined by claim 18 further including a cap at least partially covering the working portion, the flip chip bond pad being secured to the cap.

20. The sensor as defined by claim 19 further including a conductive pathway extending through the cap from the flip chip bond pad to the circuitry.

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